Section 5
Bicycle Facilities

The purpose of this section is to review the existing bicycle system network within the Rockford Area Transportation Study (RATS) Metropolitan Planning Area (MPA) and to identify, recommend, and prioritize additions to the system network. The communities within the MPA previously have not planned for on-street routes. This Plan identifies and prioritizes on-street routes.

5.1 Existing Conditions

Map 5-1, Existing Bicycle Facilities shows the existing bicycle and shared use path network. Shared use paths are defined by the American Association of State Highway Transportation Officials (AASHTO) as facilities that are separate from roadways used for recreational bicycling, walking, and other outdoor activities. Within Winnebago and Boone Counties, there are currently 90 miles of shared use paths, a 2.6-mile signed route along Spring Brook Road, and a one-half mile bike lane, which is located in Machesney Park (See **Figure 5-1, Machesney Park Bicycle Lane**). Fifty-five miles of the total are located within the MPA.

Figure 5-1
Machesney Park Bicycle Lane

5.2 Proposed Improvements

This plan proposes more than four hundred additional miles of bicycle corridors in the MPA. These corridors are located along major roadways, in open space (forest preserves, conservation districts, parks, etc.), and along waterways.

The proposed corridors came from four sources: the Winnebago and Boone County Greenways Plan, the League of Illinois Bicyclists, and public involvement processes from the RATS 2035 Long Range Transportation Plan and this Plan.

The Winnebago and Boone County Regional Greenways Plan provided a starting point to identify proposed shared use paths. The League of Illinois Bicyclists created a guide for on-street bicycling within the City of Rockford. This guide identified most of the on-street network. Finally, public input from a workshop conducted in January 2005 for the 2035 Long Range Transportation Plan and in conjunction with this Plan assisted in the determination of criteria that could be used to prioritize the corridors. Also noted in this

plan is the Rockford Riverwalk, a proposed shared use path along the Rock River through downtown Rockford.

The existing bicycle network, provided by RATS and county agencies, consists of corridors of various lengths ranging from a few hundred feet to several miles. Bicycle corridors, unlike pedestrian corridors, cannot be divided into uniform segments following the streets within municipal blocks. Proposed corridors, therefore, consist of segments of various lengths. Typically, a proposed segment was defined as a continuous line stretching from an intersection with one segment to another.

5.3 Project Prioritization

The following criteria were used to prioritize each corridor for implementation:

- Provides a connection to existing shared use paths
- Provides east-west connections to existing shared use paths
- Provides a connection to Rock Cut State Park
- Provides a connection to the Grand Illinois Trail
- Provides a connection to the Rockford Riverwalk
- Is near a major employer
- Is near a public facility, park, or school

In addition, on-street facilities can be implemented at a faster rate than off-street facilities. This is primarily due to cost; on-street facilities are less expensive than off-street shared-use paths. Due to this condition, priority was given to on-street bicycle facilities that could serve as connections within the bicycle network until shared-use paths can be built.

Segments were reviewed on a map and rated according to the criteria mentioned above and their overall performance as a network. Of all the criteria used to rate the proposed segments, connectivity of existing paths was determined to be the most important. Connectivity is a concept identified in the 2035 Long Range Transportation Plan and was a goal discussed in the public involvement process. Also, participants within the public involvement process commented that the MPA has several good north-south shared-used paths, but additional east-west connections between paths were needed. The Grand Illinois Trail connection also was included due to its regional and statewide significance.

Resulting segments were grouped into one of three categories: "**high,**" "**medium,**" and "**low**" priority based on how well they satisfied each of the prioritization criteria (See **Attachment B, Bicycle Facility Priorities**).

Table 5-1, Proposed Bicycle Corridors by Municipality and Priority shows the total mileage of combined prioritized corridors.

Table 5-1
Proposed Bicycle Corridors by Municipality and Priority*

Jurisdiction	Length (miles)			
	Low	Medium	High	Total
Belvidere	18.3	12.4	22.9	53.6
Capron	0.0	0.0	0.0	0.0
Cherry Valley	0.0	3.0	8.0	10.9
Loves Park	1.9	13.2	35.9	51.1
Machesney Park	1.8	5.2	3.5	10.4
Poplar Grove	7.8	4.5	0.0	12.3
Rockford	42.5	90.5	95.5	228.5
Roscoe	0.8	6.9	0.5	8.1
Timberlane	0.7	0.0	0.0	0.7
Unincorporated	23.9	9.5	15.9	49.3
Winnebago	0.0	0.0	0.0	0.0
Total	97.8	145.2	182.1	425.1

*Segment lengths were measured using ArcGIS software. Some segments may extend beyond jurisdiction boundaries.

The corridors were divided further into on-street and off-street facilities. Shared use paths that are proposed in this plan already were identified in the Boone and Winnebago Regional Greenways Plan. On-street routes and lanes have been proposed to complement these paths to provide a comprehensive bicycle facility network.

Roadway width, number of lanes, and travel speed were used to determine whether the corridor would be recommended as a route or lane. A bicycle lane is a portion of the roadway that is marked and signed for use by bicyclists. Bicycle lanes typically are five feet wide and travel in the same direction as automobile traffic. A bicycle route is a portion of the roadway that is signed for shared use between bicyclists and motorists. Routes often are used where there is not enough roadway width for a bicycle lane. Information regarding roadway width was collected from RATS and supplemented by field measurements taken at various locations within the MPA roadway network.

Table 5-2, Proposed Bicycle Corridors by Municipality and Facility shows the total proposed length of each type of facility by municipality. Three maps have been created to illustrate the proposed bicycle network:

- **Map 5-2, Proposed On-Street Facilities**
- **Map 5-3, Proposed Shared Use Paths**
- **Map 5-4, Proposed Bicycle Facilities Master Plan**

Table 5-2
Proposed Bicycle Corridors by Municipality and Facility*

Jurisdiction	Length (Miles)				
	Facility			Route or Lane (not determined)	Total**
	Bike Lane	Shared Use Path	Bike Route		
Belvidere	0.9	36.6	16.1	0.0	53.6
Capron	0.0	0.0	0.0	0.0	0.0
Cherry Valley	1.1	6.7	3.2	0.0	10.9
Loves Park	4.6	24.9	19.5	2.0	51.1
Machesney Park	0.3	6.7	3.5	0.0	10.4
Poplar Grove	0.0	7.8	0.0	4.5	12.3
Rockford	33.4	80.2	108.7	6.2	228.5
Roscoe	7.4	0.8	0.0	0.0	8.1
Timberlane	0.0	0.7	0.0	0.0	0.7
Unincorporated	3.6	21.8	24.0	0.0	49.3
Winnebago	0.0	0.0	0.0	0.0	0.0
Total	51.3	186.2	175.0	12.6	425.1

*Segment lengths were measured using ArcGIS software. Some segments may extend beyond municipal boundaries.
**Due to rounding, totals vary from values in Table 5-1.

Segments marked "Route or Lane (not determined)" may not be suitable for bicycle lanes because they have more than two traffic lanes or lane widths are too narrow to accommodate bicycles. These segments should be analyzed in further detail to determine possible solutions that could provide on-street access for bicycles.

One possible solution for these roads is known as a "road diet." Road diets involve the elimination and reconfiguration of one or more traffic lanes to accommodate bicycles and, in some cases, on-street parking.[1] This measure can be used on streets where greater than three lanes of traffic are present. Road diets also are useful for calming traffic through a corridor and where traffic is low enough that a road diet would not lead to increased traffic congestion.

5.4 Cost Estimation

Cost estimates are provided for bike routes, lanes, and shared use paths in **Table 5-3, Bicycle Facility Cost Estimates**. These figures have been used to estimate the construction cost of facilities within the proposed on-street and off-street corridors. A 15% contingency cost was applied to all estimates. **Table 5-4, Facility Cost Estimates by Municipality** shows estimated construction costs for bike routes, bike lanes, and shared use paths. **Table 5-5, High Priority Route and Lane Costs by Municipality** shows the estimated costs for constructing all on-street bicycle facilities rated as high priority for the region. This table isolates the most critical portions of the proposed

[1] Federal Highway Administration. *Evaluation of Lane Reduction "Road Diet" Measures and Their Effects on Crashes and Injuries.* U.S. Department of Transportation. McClean, VA, 2006.

bikeway network that should be completed first. Construction of all high priority bicycle lanes and routes within the region is estimated to cost $912,500.

Table 5-3
Bicycle Facility Cost Estimates

Pay Item	Unit Cost	Unit	Units Per Mile	Cost Per Mile
Bike Route				
Signs	$120.00	Each	8	$960
Sign posts	$50.00	Each	8	$400
Bicycle Pavement Markings	$70.00	Each	16	$1,120
Design Engineering (15%) + Construction Engineering (15%)				$744
Total + 15% Contingency				**$3,800**
Bike Lane With Parking				
Standard Sign	$120.00	Each	8	$960
Sign post	$50.00	Each	8	$400
Thermoplastic Pavement stripes	$0.70	Linear ft.	21,120*	$14,784
Bicycle Pavement Markings	$70.00	Each	16	$1,120
Design Engineering (15%) + Construction Engineering (15%)				$5179
Total + 15% Contingency				**$25,900**
Shared Use Path				
Excavation	$35.00	Cu. yard	1,956	$68,445
Fill (Compacted Subgrade Material)	$10.00	Cu. yard	1,956	$19,560
6” Aggregate Base Course	$10.25	Sq. yard	5,867	$60,134
4” Bituminous Surface Course	$90.00	Ton	1,314	$118,272
4” Thermoplastic Pavement Stripes	$1.00	Linear ft.	5,280	$5,280
Engineering (25% of total cost)				$68,000
Total + 15% Contingency				**$390,700**

*Assumes four pavement lines are required per mile (two for each direction of travel)
(Note: On roads without parking, the cost of bike lanes is $26,120 per mile).

Table 5-4
Facility Cost Estimates by Municipality*

Municipality	Facility			Total
	Bike Lane	Shared Use Path	Bike Route	
Belvidere	$24,000	$14,310,200	$61,100	$14,395,300
Capron	$0	$0	$0	$0
Cherry Valley	$28,100	$2,608,400	$0	$2,636,500
Loves Park	$120,100	$9,739,800	$0	$9,859,900
Machesney Park	$7,500	$2,609,000	$3,400	$2,619,900
Poplar Grove	$0	$3,066,600	$0	$3,066,600
Rockford	$865,300	$31,324,300	$1,607,600	$33,797,200
Roscoe	$190,700	$308,600	$0	$499,300
Timberlane	$0	$268,100	$0	$268,100
Unincorporated	$93,800	$8,499,800	$620,900	$9,214,500
Winnebago	$0	$0	$0	$0
Total	$1,328,973	$72,734,289	$0	$74,063,262

*Estimates rounded up to the nearest $100.

Table 5-5
High Priority Route and Lane Costs by Municipality*

Municipality	Miles		Total Cost
	Bike Route	Bike Lane	
Belvidere	13.4	0.9	$74,800
Capron	0.0	0.0	$0
Cherry Valley	1.3	1.1	$33,000
Loves Park	18.7	2.8	$143,000
Machesney Park	1.7	0.3	$13,800
Poplar Grove	0.0	0.0	$0
Rockford	53.4	15.1	$594,700
Roscoe	0.0	0.5	$12,200
Timberlane	0.0	0.0	$0
Unincorporated	10.9	0.0	$41,300
Winnebago	0.0	0.0	$0
Total	99.2	20.7	$912,500

*Estimates rounded up to the nearest $100.

The government agencies within the MPA are responsible for the development and implementation of bicycle facilities. As with any prioritization methodology, exceptions and other items will need to be considered. However, this prioritization process serves as a guide to recommend facilities that should be built first.